



## Plastic Deformation, Strengthening and Toughening of Advanced Metallic Materials

Guest Editor:

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### Message from the Guest Editor

Metallic structure materials have been gaining widespread industrial applications, owing to their excellent properties. Strong metals are substantially desired in lightweight and energy-efficient industrial designs, such as in extensive applications of high-strength steels and aluminium (Al) alloys in automobiles, trains and planes. In most industrial alloy production and modern alloy design strategies, multiple obstacle families (for instance, solid solutions, particles and grain boundaries) and dislocations are employed to increase the strength. In recent years, numerous efforts have been contributed to processing high-strength metallic materials with good ductility or toughness. For such advanced alloys, the mechanisms of strengthening and toughening, as well as their plastic deformation mechanisms related dislocations evolutions, are still under debate.

In this Special Issue, we welcome the submission of original research articles, communications and reviews concerning the plastic deformation, strengthening and toughening of advanced metallic materials. Contributions demonstrating experiments, simulations and modelling related to the above subject are welcomed.





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